

REMARKS

Claims 28-40 have been allowed. Claim 45 has been amended and claim 48 has been re-written in independent form. Thus, claims 28-52 are presented herein for the Examiner's review and consideration.

The Applicants acknowledge the indication of allowable subject matter in claim 48 and have now presented that claim in allowable form. In this regard, the thickness removal recitation has not been retained in that claim as it is believed to be patentable based on the different combination of process steps that are recited. In view of the above amendment to claim 45 and the following remarks, however, the Applicants respectfully request favorable reconsideration and allowance of all of the pending claims.

Claim 45 was rejected under 35 U.S.C. 112 for being indefinite, as it recited the limitation "the oxide" in line 2. Consequently, claim 45 has been amended to depend upon claim 44, which provides the proper antecedent basis for the recitation of claim 45. Thus, withdrawal of this 35 U.S.C. 112 rejection is warranted.

Claims 41, 42, 46, 47 and 49-52 have been rejected for allegedly being obvious in view of Malik (US 2002/0173872), Maszara and Van Zandt.

Malik pertains to a computer-memory product containing a program suitable for controlling a substrate surface finishing apparatus. Cited paragraphs 53 and 54 of Malik describe a surface finishing process that includes an optional pre-smoothing step (see paragraph 53 and Fig. 3 of Malik), and touch-polishing to smooth a composite substrate. As noted in paragraph 9 of the Action, Malik does not teach or suggest to remove between about 200Å to 400Å of the substrate as recited in independent claim 41. The cited Maszara and Van Zant references also fail to suggest or teach this range. Thus, even if the references are combined as set forth in the office action, this step is not disclosed.

In contrast, the Applicants have found that removing only 200Å to 400Å of the substrate by chemical mechanical polishing after an annealing step is sufficient to bring the roughness value, and especially the low-frequency roughness value, to a satisfactory level (See application, page 16, line 27 to page 17, line 2). Surprisingly, it was discovered that by utilizing an annealing operation before chemical-mechanical polishing, not only was there an improvement in the quality of the working layer, but most harmful effects of chemical-mechanical polishing were

avoided (page 3, lines 1-8). This is true because when only 200Å to 400Å of the substrate is removed as claimed, the polishing duration is short and is much less than that used by conventional techniques. One result is that production capacity can be increased (page 3, lines 11-14). Further, it was surprising to find that removing only 200Å to 400Å of the substrate does not adversely affect the uniformity of the thickness of the substrate (page 3, lines 14-18). For these reasons, the removal of this thickness is critical to achieving the unexpected benefits of the invention. The Applicants therefore respectfully traverse the statement made in paragraph 10 of the Action that the present specification lacks disclosure of the critical nature of the claimed removed thickness or any unexpected results. It is therefore respectfully asserted that claim 41 is patentably distinct from the cited art. Thus, withdrawal of the 35 U.S.C. 103 rejection of claims 41, 42, 46, 47 and 49-52 is requested.

Claim 43 was rejected for being unpatentable over Malik, Maszara, Van Zant and Kobayashi (U.S. patent 6,531,416). Claims 44 and 45 were also rejected as being unpatentable over Malik, Maszara, Van Zant and Maleville (U.S. patent 6,403,450).

Claims 43-45 all depend directly or indirectly on independent claim 41, which is patentably distinct over the cited art as discussed above. Dependent claims 43-45 should thus be allowable for at least the same reasons. Consequently, the Applicants request withdrawal of the 35 U.S.C. 103 rejections of claims 43-45.

In view of the above amendment and remarks, the applicants respectfully request favorable reconsideration and allowance of the application. Should the Examiner not agree that all pending claims are allowable, then a personal or telephonic interview is requested to discuss any remaining issues and expedite the eventual allowance of these claims.

Respectfully submitted,

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